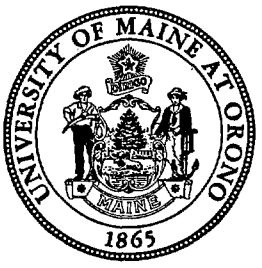
NATURAL RESOURCES INVENTORY COURSES IN THE COASTAL AREA



Prepared by

Sterling Dow III

Prepared for
Maine State Planning Office
Resource Planning Division

August 1976

ENVIRONMENTAL STUDIES CENTER
University of Maine at Orono
Orono, Maine 04473

COMPLETION REPORT

Environmental Studies Center

University of Maine at Orono

NATURAL RESOURCES INVENTORY COURSES IN THE COASTAL AREA

by

Sterling Dow III[1]

October 1976

Funds for this project were provided by the Maine State Planning Office, appropriation # 4024-1008-4056, the University of Maine at Orono and the Maine Association of Conservation Commissions.

[1] Executive Director
Maine Association of Conservation Commissions
PO Box 548
Kennebunkport, Maine 04046

CONTENTS

BACKGROUND

Through a Title One, Higher Education Act grant in 1974, the University of Maine at Orono (UMO) and the Maine Association of Conservation Commissions (MACC) taught two courses on the natural resources inventory process. These courses were given in Milbridge and Dover-Foxcroft. Eight towns* completed inventories in the Milbridge region; six** in the Dover-Foxcroft region.

The results of these initial courses proved several points. First, there is a need felt by local people to understand better their natural environment. Second, courses that offer a product, developed by the participants, are perceived as being valuable to the local people. Third, if the course itself is a "hands-on" course, that is, if the participants do something, it will be more interesting and hence successful. Fourth, if the hands-on project relates directly to each participant's home town, the course will be more meaningful.

As a result of these two courses, a handbook was developed which is designed to take lay people through the natural resources inventory process. This handbook entitled "How To Make A Natural Resources Inventory" was published in 1975 by Title One funds.***

The State Planning Office (SPO), early in 1975, expressed an interest in applying the teaching techniques used in the

* Sullivan, Sorrento, Eastbrook, Gouldsboro, Winter Harbor, Steuben, Cherryfield and Milbridge

** Dover-Foxcroft, Abbot, Lincoln, Ripley, Dexter and Harmony

*** available from Allagash Environmental Institute, 246 Deering Avenue, Portland, Maine 04102 (207-773-2981) or from Maine Association of Conservation Commissions PO Box 548, Kennebunkport, Maine 04046 (207-967-3705)

Title One project to towns in the coastal zone. Funding was available from the Coastal Zone Management (CZM) planning monies. Through 1975, MACC and SPO developed the form that resulted in the courses described below. Funding went from the Office of Coastal Zone Management in Washington to the State Planning Office in Augusta to the University of Maine at Orono. UMO's Environmental Studies Center directed the contract and MACC was given the task of administering the courses.

PRELIMINARY WORK

Mailing

As soon as MACC learned that the contract was firm (January 14, 1976), separate mailings were done to all head selectmen, planning board chairmen, conservation commission chairmen, town managers, code enforcement officers and interested citizens (including regional and state agencies, private organizztions, etc.) in each region where the course was to be offered. In addition, a general mailing went to public officials and citizens outside of the immediate coastal region.

The combined mailing was sent to approximately 3000 people. Owing to the very tight time bind, created by the slow progress of the contract and the need to start the courses no later than February first, all letters were sent out first class. Over 200 responses were received from people indicating a direct interest in taking one of the courses.

Scheduling

Course scheduling had been designed prior to the mailing so that participants could have a minimum of two weeks between each session. This was done to give the participants time to work on maps as they went along. Unfortunately two weeks was the maximum amount of time available between sessions, and even so, some sessions ended in mid-June.

Simultaneously with the mailing, publicity announcing the course was released to the major dailies and all coastal weeklies, plus the Maine Times. Newsletters of regional planning commissions, the Department of Environmental Protection, the Natural Resources Council, the Maine Audubon Society, the State Planning Office, Time and Tide Resource Conservation and Development Project (RC & D), and the MACC all carried notices of the series of courses.

It should be noted that, in compiling names to contact for the mailing, MACC wrote to and received much helpful assistance from all six regional planning agencies in whose districts the courses were being taught. These were the Washington County, Hancock County, Penobscot Valley, Eastern Mid-Coast and Southern Mid-Coast regional planning commissions plus the Greater Portland Council of Governments. The course was not offered south of Scarborough, since the Southern Maine Regional Planning Commission (RPC) was giving a similar course to townships in its district.

Scheduling of separate locations for the courses was accomplished rapidly owing to excellent cooperation by the school and University personnel involved. Facilities at all

nine locations were donated by the educational institutions involved. There was no charge for the use of the rooms. Janitorial services were uniformly excellent. MACC was in close touch with the personnel at all locations to make sure that the courses did not interfere with school holidays and/or commencement proceedings.

Instructors

The scheduling was designed for four instructors. These men were contracted to teach the material as presented in the handbook because of their familiarity with land use planning. James Connors taught the previous Title One course at Milbridge and Dover-Foxcroft, and works as a resource planner for the Land Use Regulation Commission, Department of Conservation. John Lord is a land planner by profession, having his own business in Bangor. He taught previously at the University of Maine at Orono. Robert Crane is Executive Director of the Washington County Regional Planning Commission and worked for several years with townships in that area. Brian Ames is a professional engineer whose firm has worked closely with John Lord's company. Mr. Ames has a broad knowledge of the various inventory items, with particular emphasis on geology, groundwater and soils.

Mr. Connors taught four locations; Mr. Lord, three; Mr. Crane, one; Mr. Ames, one. The scheduling was designed so that each instructor taught a maximum of two sessions per week. The only exceptions to that rule were Mr. Connors having

three sessions in his first and last weeks, and Mr. Lord having three sessions in his first week.

Resource People

In addition to meetings between MACC and the instructors, the Environmental Studies Center arranged for two sessions with resource people drawn from the University faculty. A total of seven faculty members discussed geology, soils, climate, wildlife, marine biology and hydrology. Five resource people were utilized by the instructors to assist them in classroom discussions of hydrology, geology (both bedrock and surficial) and ground cover.

PROJECT DESCRIPTION

A ten session course, designed to teach participants how to make a natural resources inventory (NRI) of their own township, was given at nine locations* on the Maine coast. The sites were chosen so that all persons living on the coast were less than 20 miles away from a course location. Since the courses at all nine locations began in the mid-winter (and ran into early June), it was necessary to allow for poor weather and bad driving conditions at night.

Percentage Participation

As can be seen from Appendix A, 70 townships were represented in the courses, of which 56 were in the coastal zone. There are a total of 143 townships in the coastal zone. Eleven townships were covered by the Southern Maine RPC in its own separate course; an additional ten had previously

* Perry, Machias, Ellsworth, Bangor, Searsport, Rockland, Newcastle, West Bath, Yarmouth

done NRIs; twelve were unorganized townships.

Therefore:

143
-11 (SMRPC)
132
-10 (did NRIs)
122
-12 (unorganized)
110

Hence there were 110 townships maximum that were eligible to take the courses. Since 56 took the courses, the percentage of participation is 56/110 or 51%.

A sampling of 28 participants' occupations indicated a wide range, from mailman, realtor, clammer, lawyer, farmer and reporter to planner, business manager, carpenter and student. No one occupation occurred twice in the sample.

Format

The format of each course was similar. The instructor followed the handbook, and the participants developed the different inventory maps as the course progressed. Initially 20 base maps at a scale of 1" = 1000' were provided to each township represented, except in the few cases where overlays were to be produced. In these townships, three base maps and sufficient overlay material (3 mil acetate) were provided.

Overlays versus Shuffle

The decision to go to overlays or to produce a series of base maps with separate inventory items on each (the "shuffle" technique) was made at the initial session of each course. The participants were told the pros and cons of each system. In most cases, the shuffle technique was chosen, because of the relative ease of transferring data onto paper rather than acetate. In the few cases where the overlay system was initially chosen, some townships changed to the shuffle technique shortly thereafter.

Color vs. Grey

Also at the initial session, participants had to decide whether to do their mapping in colors or tones of grey. The latter course was recommended to them, because tones of gray lend themselves better to subsequent reproduction in black and white, should that be desired. (Note: subsequently, certain color combinations have been developed which, when reproduced in black and white, give excellent tonal variations.) A large majority of the participants chose the tones of gray.

Handbook

Each attendee at the first session of each course received a free copy of the handbook "How To Make A Natural Resources Inventory." Just under 200 copies were given out. This handbook became the textbook for the course. Several participants told MACC that they could proceed with their map work using the handbook without attending the lectures.

NRI Process

The process of compiling an NRI of a township is basically a transfer process. Data on the different inventory items has been put together in some form, usually mapped. It becomes necessary to transfer this information, mapped at different scales, to a set of maps of the same scale. As long as the data is available, the task becomes one of attention to detail, patience and time.

Inventory Items

The items to be inventoried are listed in Appendix B. In some cases, especially that of soils, the information had not

been done and/or was not available. Since three inventory items, depth to bedrock, depth to water table, and erodibility, were all dependent upon the soils information, the lack of it meant three maps could not be done.

Soils Maps

Many towns, especially those in eastern Maine, did not have soils information. Some towns had been partially mapped, so the participants could complete portions of three maps. Others, lacking any information, will have to wait until it is available.

Scale Problems

The State Planning Office has produced "generalized" soils mapping (as opposed to the Soil Conservation Services "medium intensity soil surveys") for the entire coast. This mapping was done at a scale of 1" = 4000', the scale used by SPO for all of the inventory maps being produced by their office. Townships could transfer the data from these 1" = 4000' maps to their own 1" = 1000' maps, if they desired. The relative accuracy of the final product would not be as good as using the SCS products, done at 1" = 1320'. MACC coordinated all mapping being done by SPO with the participants so that they would know what was available from that office. In addition, the Bureau of Geology in the Department of Conservation had many requests from participants for surficial or bedrock information.

Supplies

After each initial session was held, MACC ordered the

base maps from SPO and purchased all supplies from Charrette in Cambridge, Massachusetts. Over $1800 worth of materials were bought from Charrette and distributed including markers, color films, acetate, X-Acto knives, burnishers and shading screens. Each township received a complete set of supplies, sufficient to complete the twelve maps. Additional markers were supplied to participants as needed. Many townships represented found the markers did not last, owing partly to caps being loose while stored and/or partly to poor quality paper which the base maps were printed on. The paper caused the markers to "run" making it quite difficult to do a neat and accurate job.

Initial Session

MACC personally attended each initial session in all nine locations. This was done to introduce to the participants the course, the instructor, the schedule, the material, and any costs involved. The policy that SPO and MACC had set on costs was that all townships in the coastal zone received materials free, including base maps and supplies. All townships outside of the coastal zone were billed. The rationale was that since Coastal Zone Management funds were making the course possible, the coastal townships should not pay. Other townships were invited and were welcome, but on a paying basis.

Final Session

MACC also attended six of the nine final sessions. This was done to discuss completion of the mapping, possible

publication, follow-up individual meetings, evaluation forms to be sent out by MACC, and a possible follow-up course.

Communication

During the term of the courses, MACC handled a large volume of communications, both by telephone and by mail. Instructors were kept in touch with by mail; participants were notified of changes in date or location from the original schedule as well as reminders of upcoming sessions; correspondence from participants was answered; telephoning was done to participants, to instructors, to the contact people at the different locations, to suppliers, to ESC, to SPO, and so forth.

Publicity

Newspaper publicity attended the courses as they progressed. In addition, MACC arranged for an interview over MPBN, the radio/TV station at the University of Maine at Orono. The half hour show, done live from 7-7:30 p.m. on Thursday, May 20, had commentator Lee Loring interviewing Sterling Dow III and James Connors about all aspects of the courses. Much favorable comment was received as a result of the TV show.

Evaluation

After all nine sessions concluded, MACC formally thanked by letter all facilities' personnel as well as the instructors. Subsequently, an evaluation form was sent out by MACC to all participants. While this was not a part of the contract, MACC felt it to be desirable to get opinions from the participants about the different courses with an eye toward

improving format, delivery, etc. in future courses. We herewith reproduce some of the comments made.

Positive:

"The method of gathering and recording information is helpful."
"Knowledge that such resources were available proved a great help . . . ."
"The course was very interesting . . . ."
"The course served as an introduction to what can and should be done to survey the town's resources."
"The course content and presentation was quite satisfactory."
"It was really great . . . . Thank you for the opportunity to take the course."
"Thank you for your time and effort."

Negative:

"Materials for the course were not delivered when needed. I received two different types of soil maps, yet only one type was needed."
"The major problem was lack of information."
"The course was poorly presented. The lecture came straight from the book. The course did more to stimulate interest but had little problem solving aspect."
". . . the course requires too much time . . . ."
"We lacked the time and information for mapping."

Suggestions:

"The length of the course should be cut in half."
"A follow-up course . . . would be of help."
"Need better way of presenting maps. Series of slides would be most helpful."
"The basic knowledge, tools and skills necessary to do the mapping could have been taught in much less time($\frac{1}{2}$?) assuming everyone read the (handbook) ahead of each class."
"More time between sessions could be left so that students could . . . do the work in producing the maps."
"It would have been helpful to . . . complete more of the maps in the classroom."

And for one person:

"I have a totally new outlook concerning my town. It's not just the place where I live. I feel like I know its total character and resources and I've developed a new appreciation for its features and can realize its potentials. The course made me feel more capable to handle the responsibilities I must deal with as a PB Member and a Selectperson. Of all the courses and work shops I've attended, this is by far the most meaningful. Thank you.

APPENDIX A

Attendance Figures for Participants and Townships

TOTALS

Session	Number of Participants	Number of Towns
1	196	70*
2	145	66
3	142	62
4	122	59
5	111	57
6	87	50
7	81	47
8	65	43
9	70	44
10	50**	28**

* of whom 11 were auditing

** no sessions at Perry and Yarmouth; no attendance taken at Newcastle

Session	Yarmouth	West Bath	Newcastle	Rockland
1	26/13	24/8	20/10	45/10
2	22/13	20/8	18/7	30/11
3	21/10	24/9	15/6	30/10
4	19/9	24/10	10/7	24/8
5	14/7	21/9	19/9	18/8
6	10/7	14/6	11/8	21/8
7	12/7	14/6	11/5	13/6
8	7/5	11/6	6/5	9/6
9	9/6	6/4	11/8	12/5
10	no session	10/6	no attendance taken	10/5

Key 00/0

- 00 — number attending
- 0 — number of towns

Session	Searsport	Bangor	Ellsworth	Machias	Perry
1	19/7	6/5	8/2	30/12	18/3
2	20/6	8/6	7/2	12/10*	8/3
3	15/6	9/4	10/5	12/10*	6/2
4	16/5	5/4	10/4	12/10*	2/2
5	11/5	3/3	10/4	12/10*	3/2
6	6/3	2/2	9/4	12/10*	2/2
7	8/5	3/3	6/3	12/10*	2/2
8	8/4	3/3	7/3	12/10*	2/1
9	8/4	3/3	7/3	12/10*	2/1
10	8/5	3/3	7/2	12/7	cancelled

* no attendance taken by instructor - he estimates these figures

Key 00/0

- number of towns
- number attending

APPENDIX B

Course Outline

Natural Resources Inventory

Course Outline

Class Structure

a. Present new inventory items

b. Examples of maps

c. Technique for producing map of inventory item

d. Class exercise and assignment

e. Work with individuals or teams as needed

Class Content

1. Introduction to the course.

2. Layman's presentation of mapping, and first inventory item- Topography. Produce relief and slope maps.

3. Second inventory item - Hydrology. Produce surface water and watershed map, and a groundwater map.

4. Third inventory item - Geology. Produce bedrock and surficial geology map, or alternative.

5. Fourth inventory item - Soils. Produce depth to bedrock, depth to watertable, and erodibility maps.

6. Fifth inventory item - Vegetation. Produce a ground cover map.

7. Sixth inventory item - Land Use. Produce a land use map.

8. Analysis techniques and first analysis item - Development Suitability. Produce an overlay or composite development suitability map.

9. Second analysis item - Natural sensitivity. Produce an overlay or composite natural sensitivity map.

10. Wrap up.